

Figure 1: Web service interface for a service named “GetStockQuote”

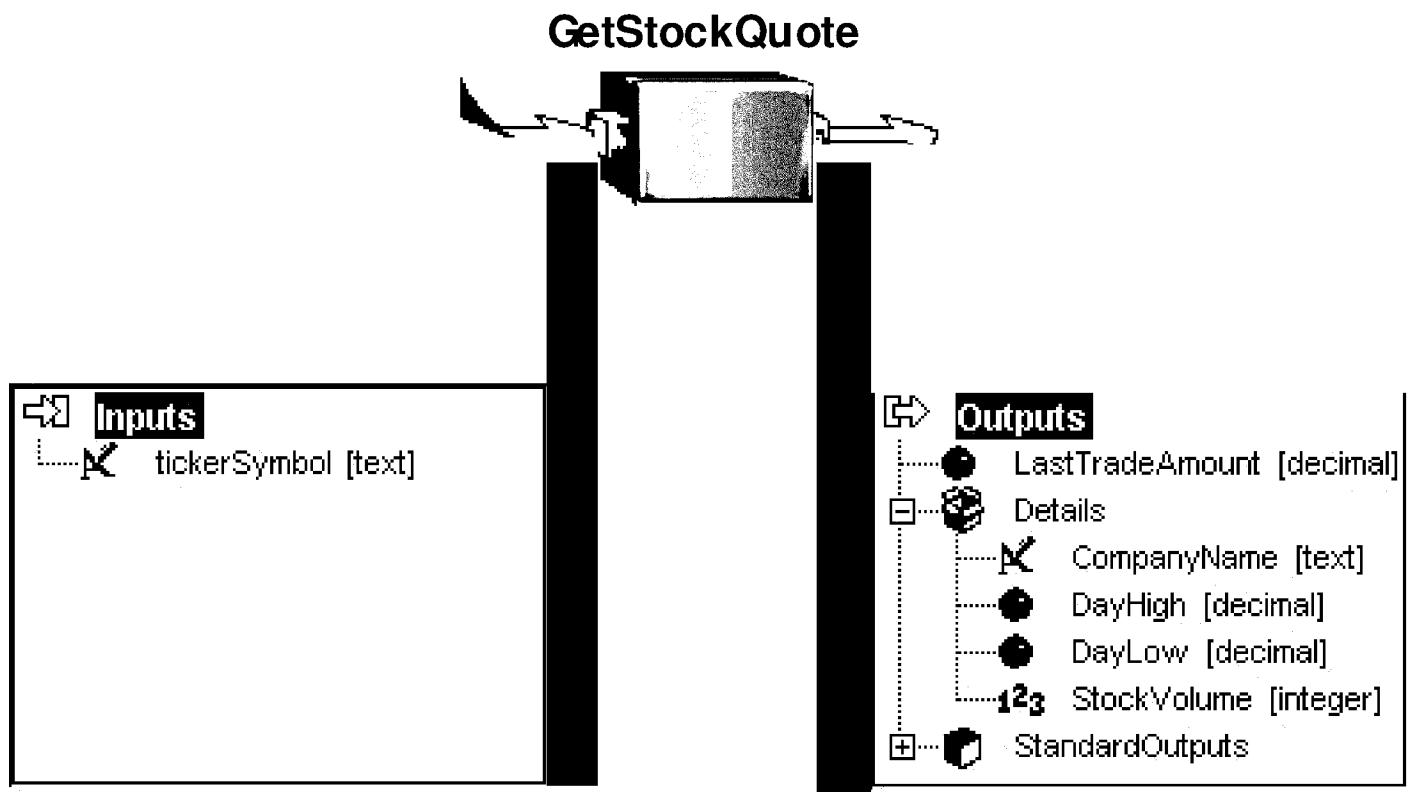


Figure 2: Composite model implementation

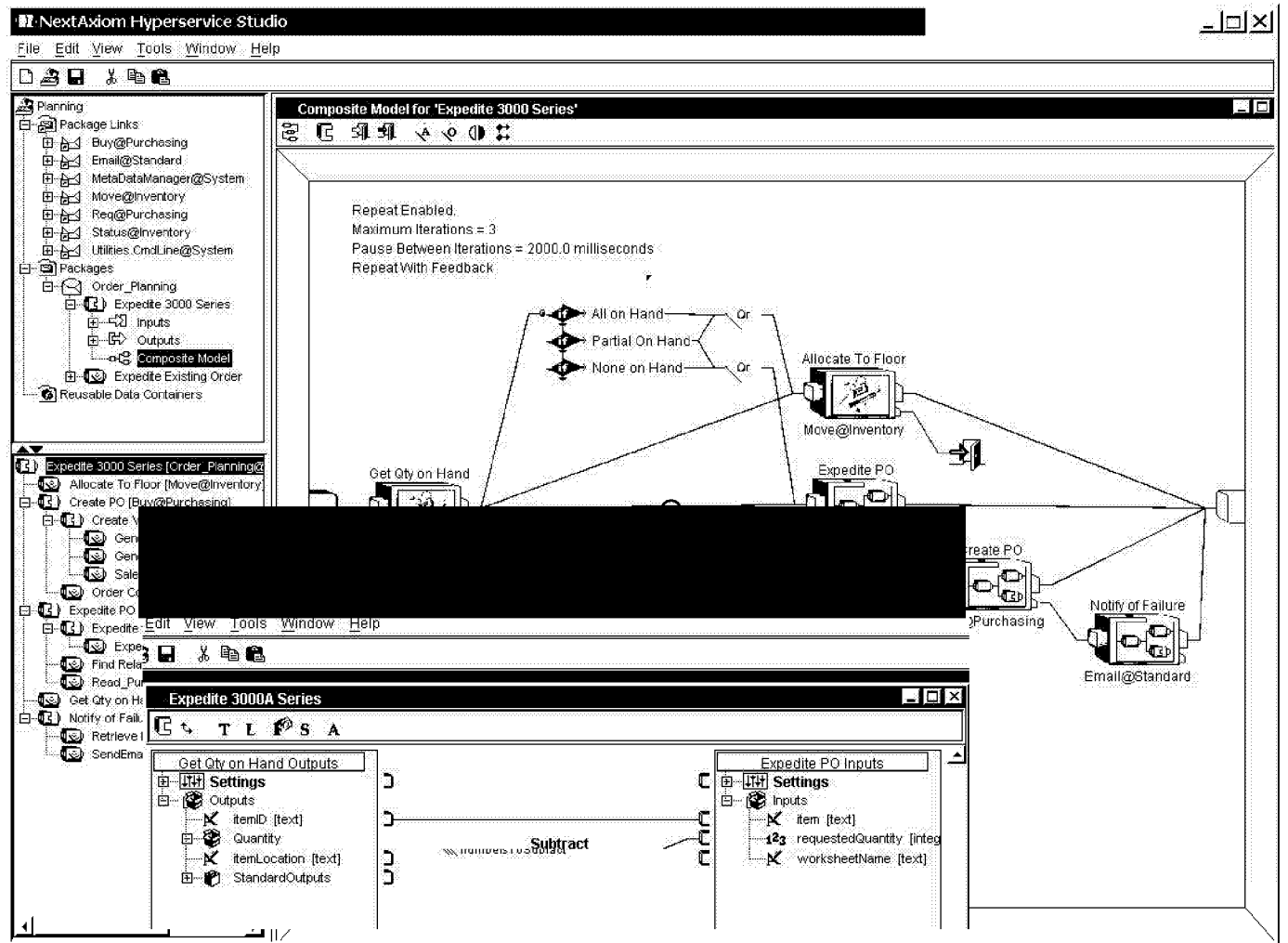


Figure 3: Composite Service

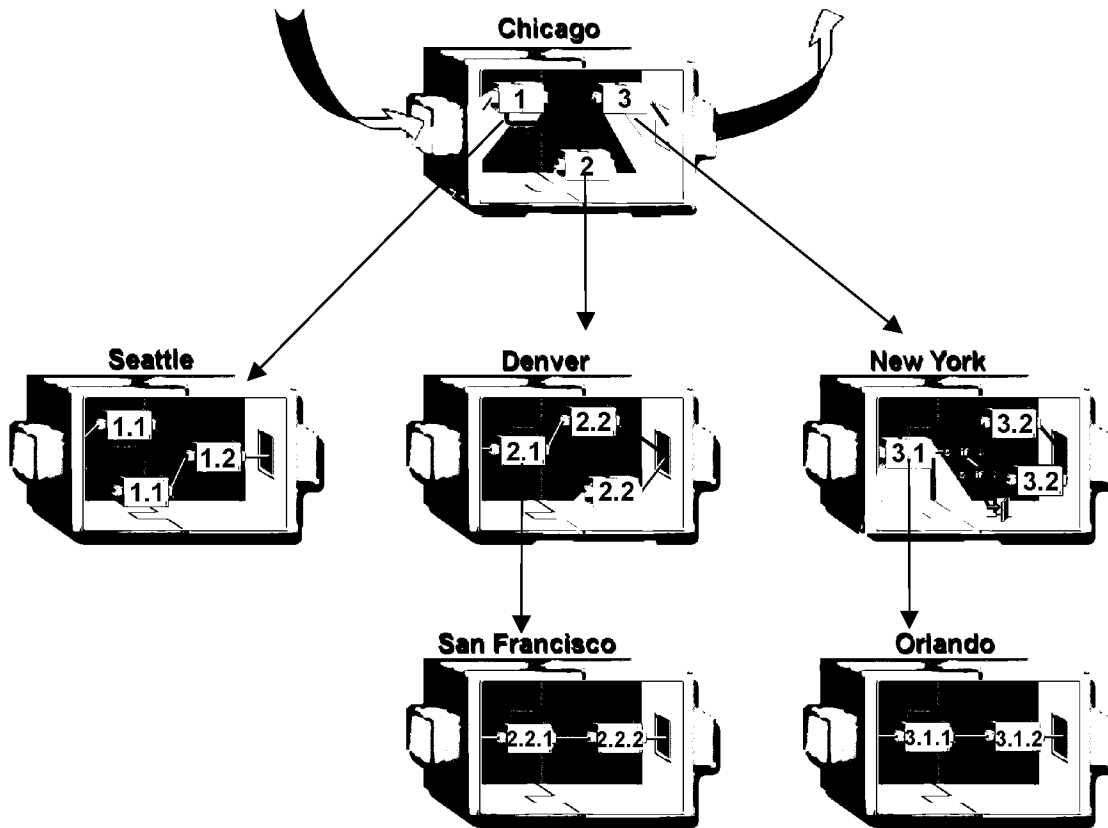
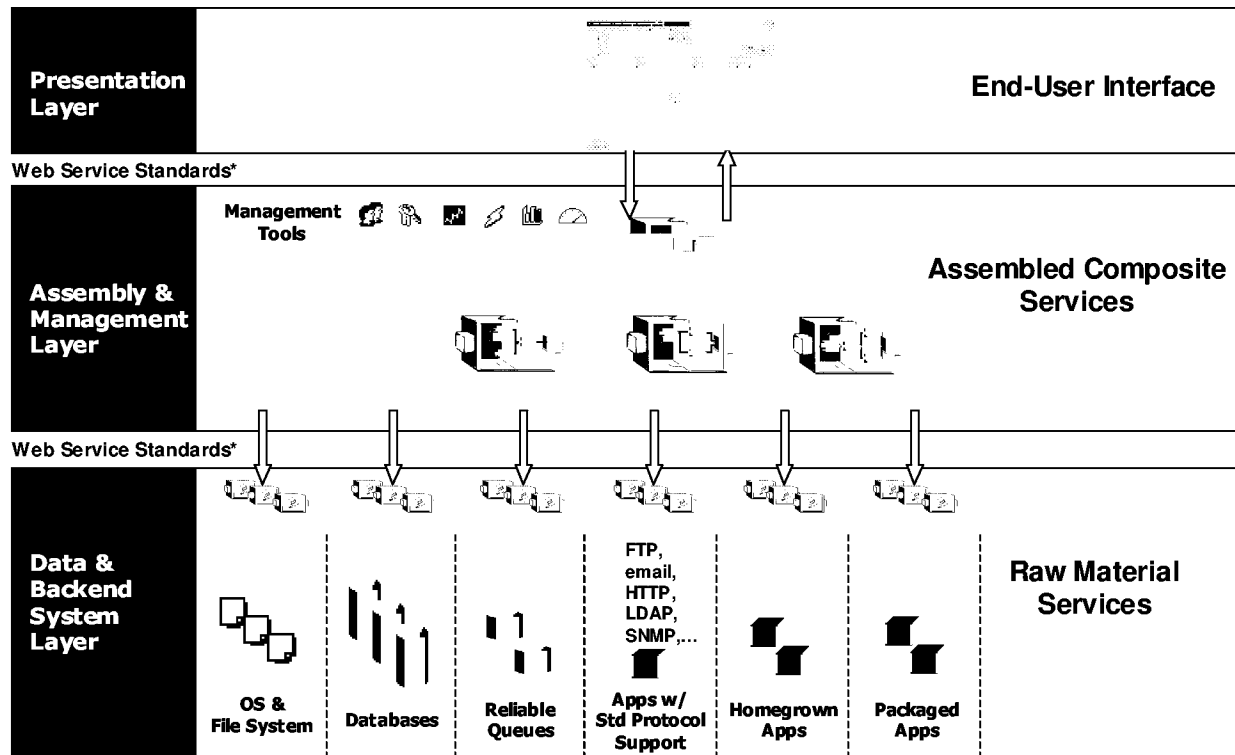


Figure 4: Service-Oriented Application Architecture



*or similar interface, consumption, and discovery protocols

Figure 5a: Log Analyzer – Graphical User Interface (GUI) calls composite services

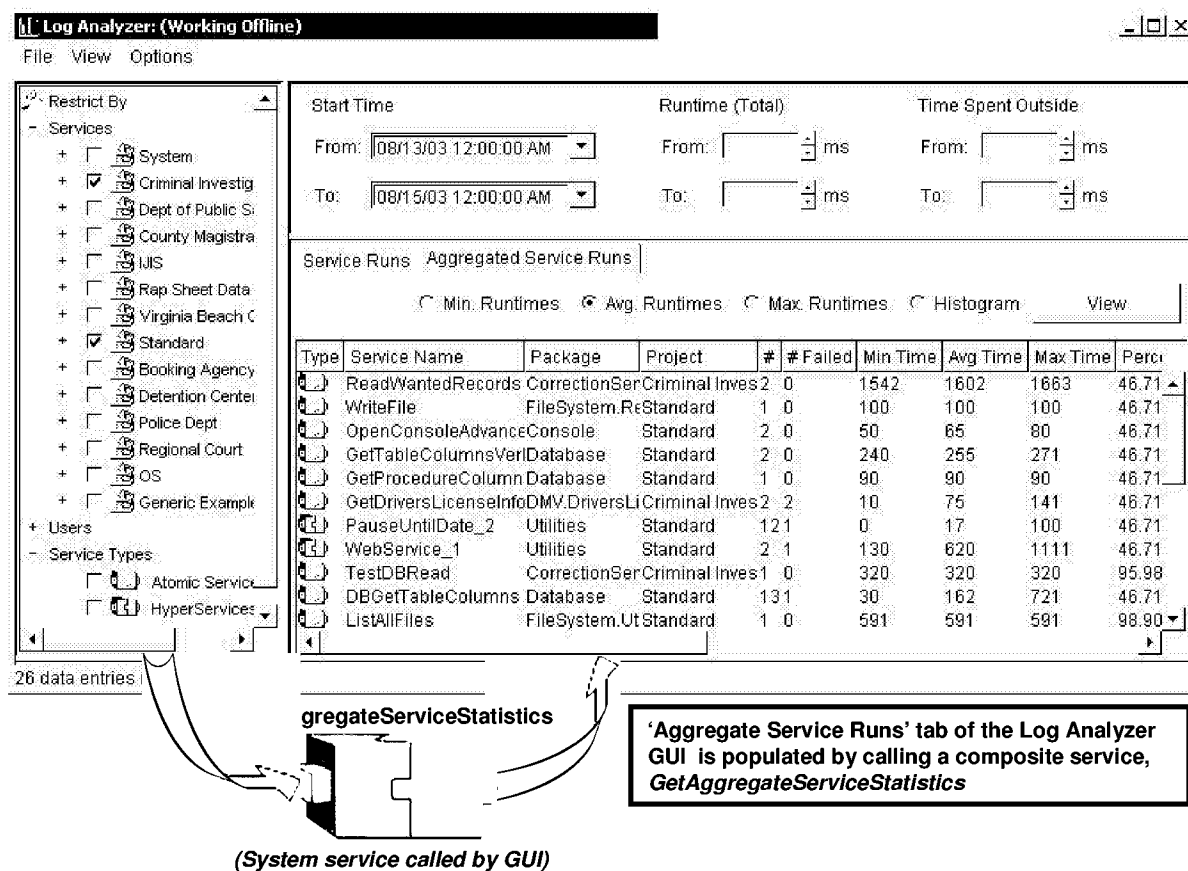


Figure 5b: Log Analyzer – GetAggregateServiceStatistics, an example composite service called by the GUI

GetAggregateServiceStatistics is a composite service that consumes other services:
CalculateServiceStatistics, *CalcStdDeviation*, & *CalculatePercentile*

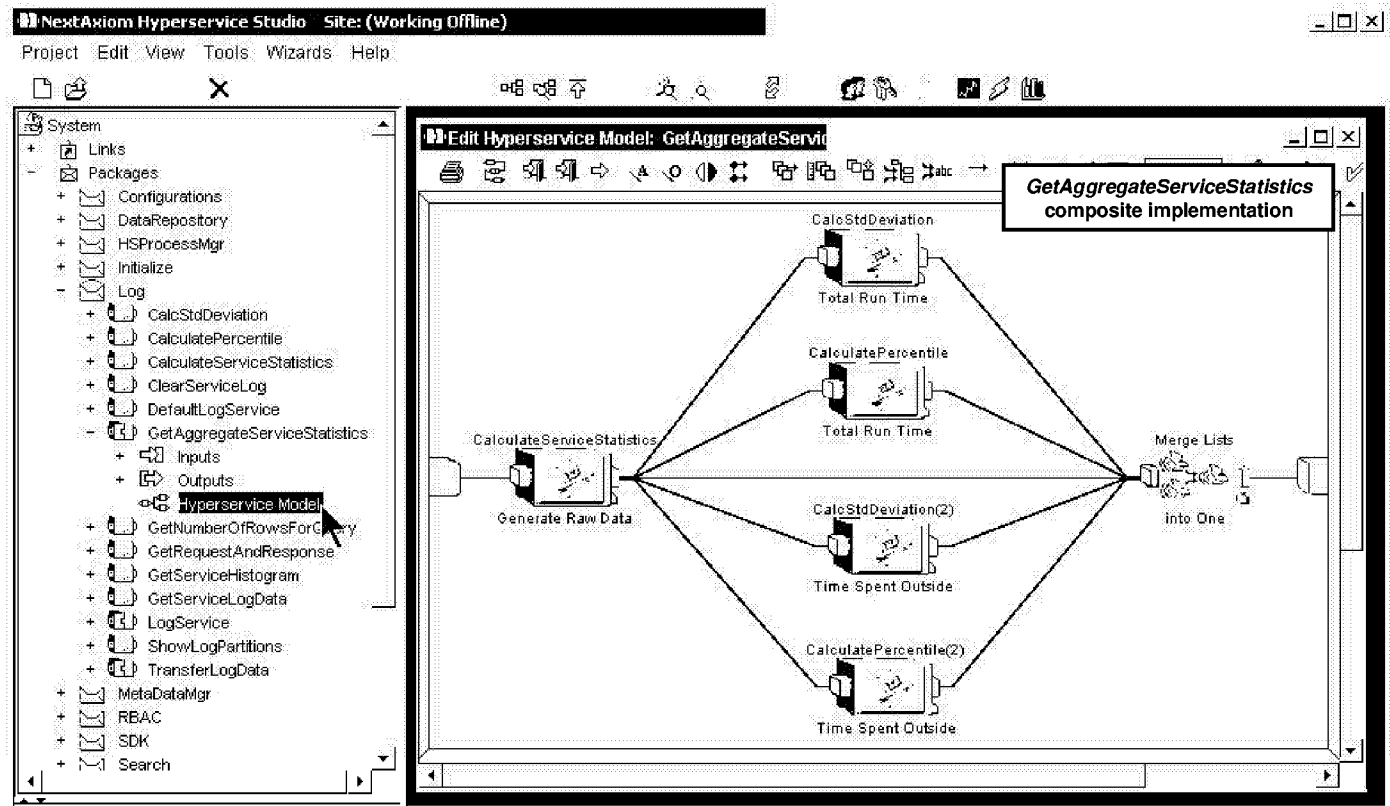


Figure 6: Services used for Metadata Management

The screenshot displays the NextAxiom Hyperservice Studio interface. The top bar shows the title "NextAxiom Hyperservice Studio" and the status "Site: (Working Offline)". Below the title bar, there are tabs for "Project" and "Edit".

The **Project Pane** on the left is titled "(showing services used by the system itself)". It contains a tree view with the following structure:

- System
 - Links
 - Packages
 - Configurations
 - DataRepository
 - HSPProcessMgr
 - Initialize
 - Log
 - MetaDataMgr
 - Account
 - AccountPackageExists
 - DeleteAccount
 - GetAccount
 - GetAccountDiff
 - GetAccountForDiff
 - GetAccountNames
 - RenameAccount
 - StoreAccount
 - UpdateAccount
 - Contract
 - Image
 - Library
 - Model
 - Package
 - DeletePackage
 - DeletePackageLink
 - GetPackage
 - GetPackageDiff
 - GetPackageForDiff
 - GetPackageLinksUsingP
 - MovePackage
 - RenamePackage
 - RenamePackageLink
 - StorePackage
 - StorePackageLink

The main workspace shows a service diagram with a callout box stating: "The *GetAccount* service is called when an account (or 'project') is opened. This service fetches account metadata, such as the packages (📁) that are displayed in the project pane."

Below the diagram, there are two **Data Container** panels. The top panel is titled "Edit: GetPackage" and has tabs for "General" and "Advanced". The "General" tab is selected, showing the "Name" as "Outputs". The "Advanced" tab shows the following **Outputs**:

- data
- accessCode
- lastModified
- PackageInfo
 - name
 - accessCode
- PackageLinkInfo
- RDCInfo

The bottom **Data Container** panel also has "General" and "Advanced" tabs. The "General" tab is selected, showing the "Name" as "Outputs". The "Advanced" tab shows the following **Outputs**:

- data
- accessCode
- lastModified
- linkAccountName
- linkPackageName
- ContractInfo
 - name
 - type
 - id
 - accessCode
- ContractLinkInfo

A callout box for the bottom panel states: "The *GetPackage* service is called when a package in the project tree is opened. This service fetches the data required to display the content of the packages in the project pane."

Figure 7a: 'Search for Web Services' GUI – calls System services

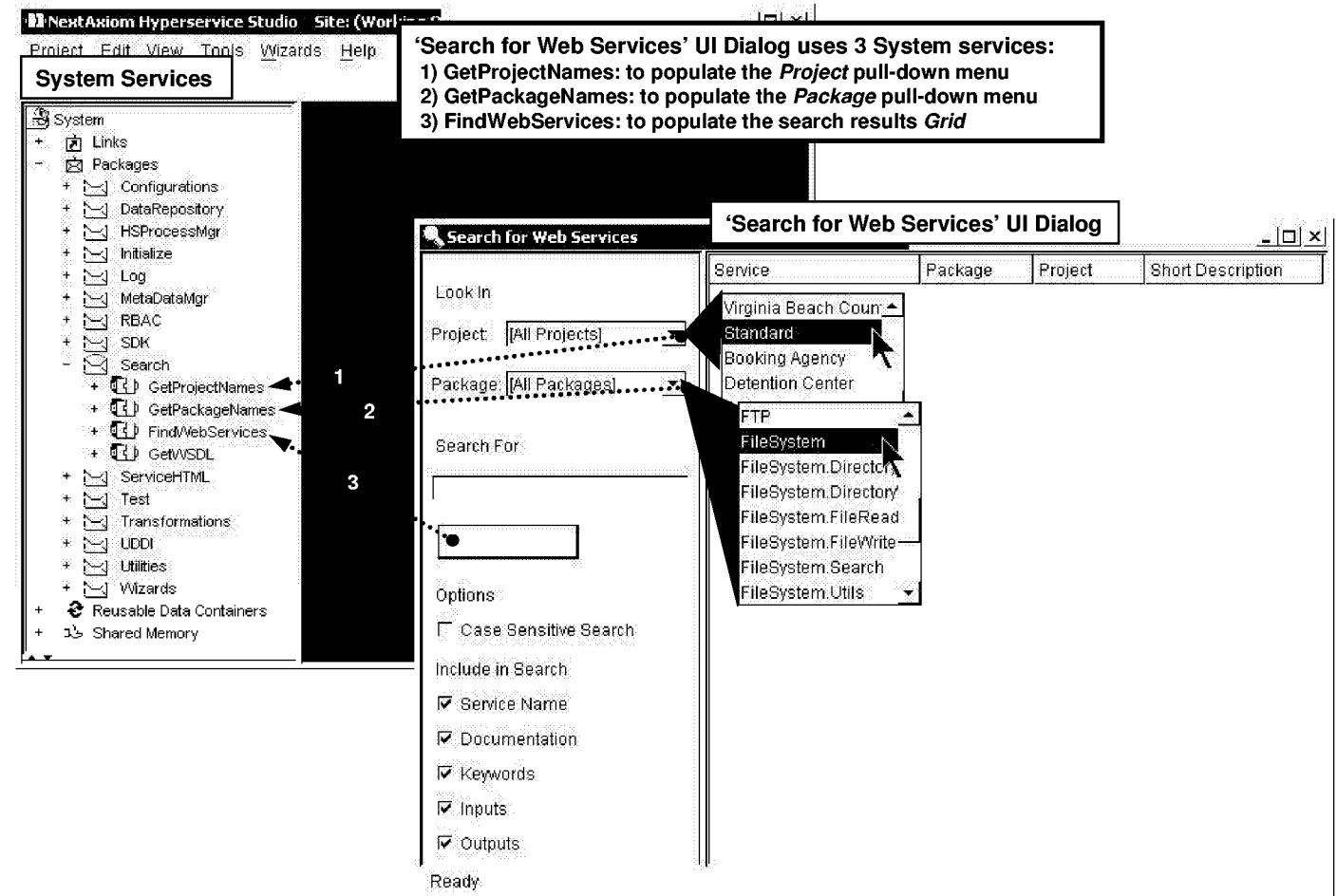


Figure 7b: 'Search for Web Services' GUI – using 'FindWebServices' composite service

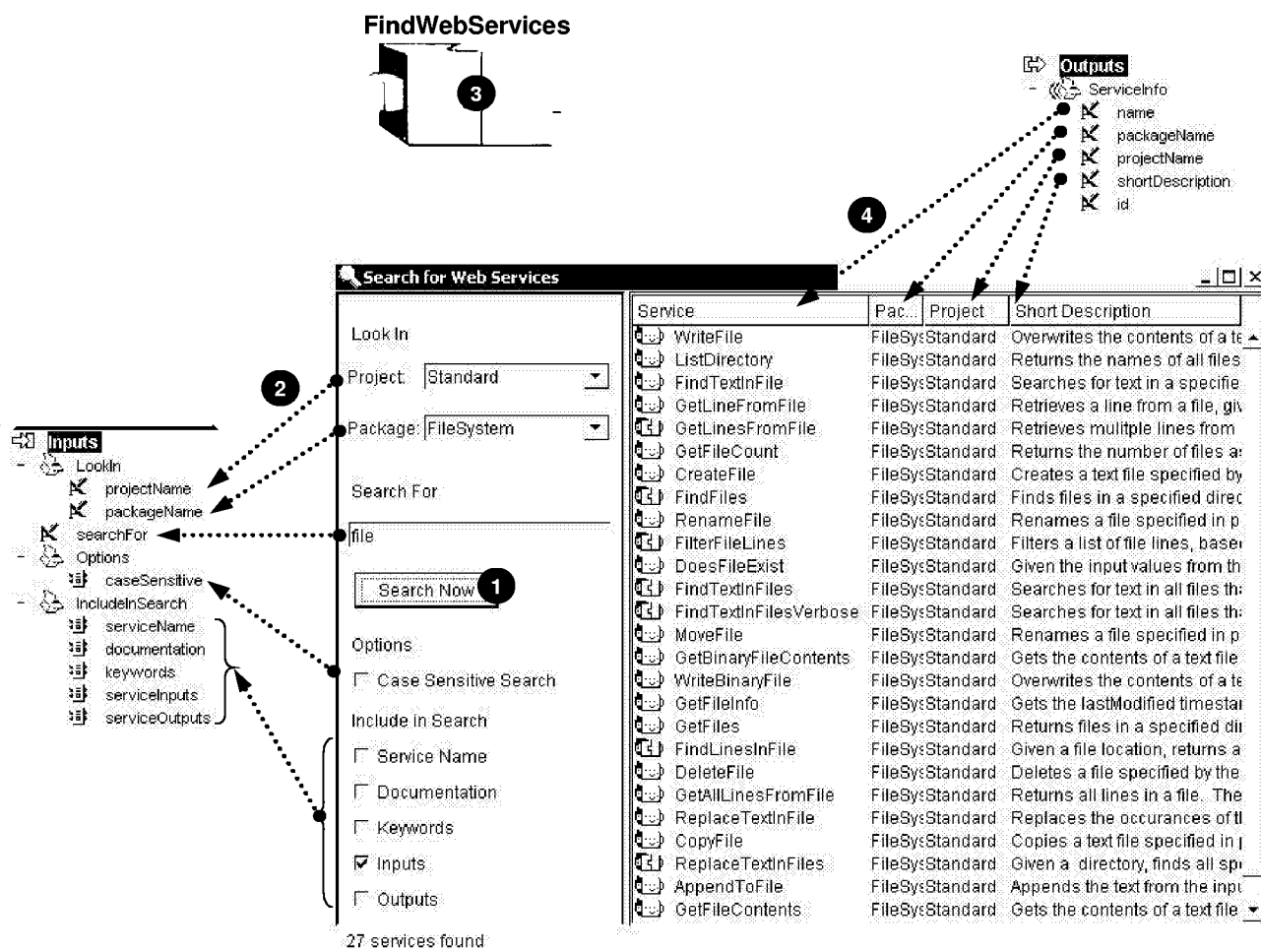


Figure 8: Logging Service Execution – Kernel calls a customizable composite service

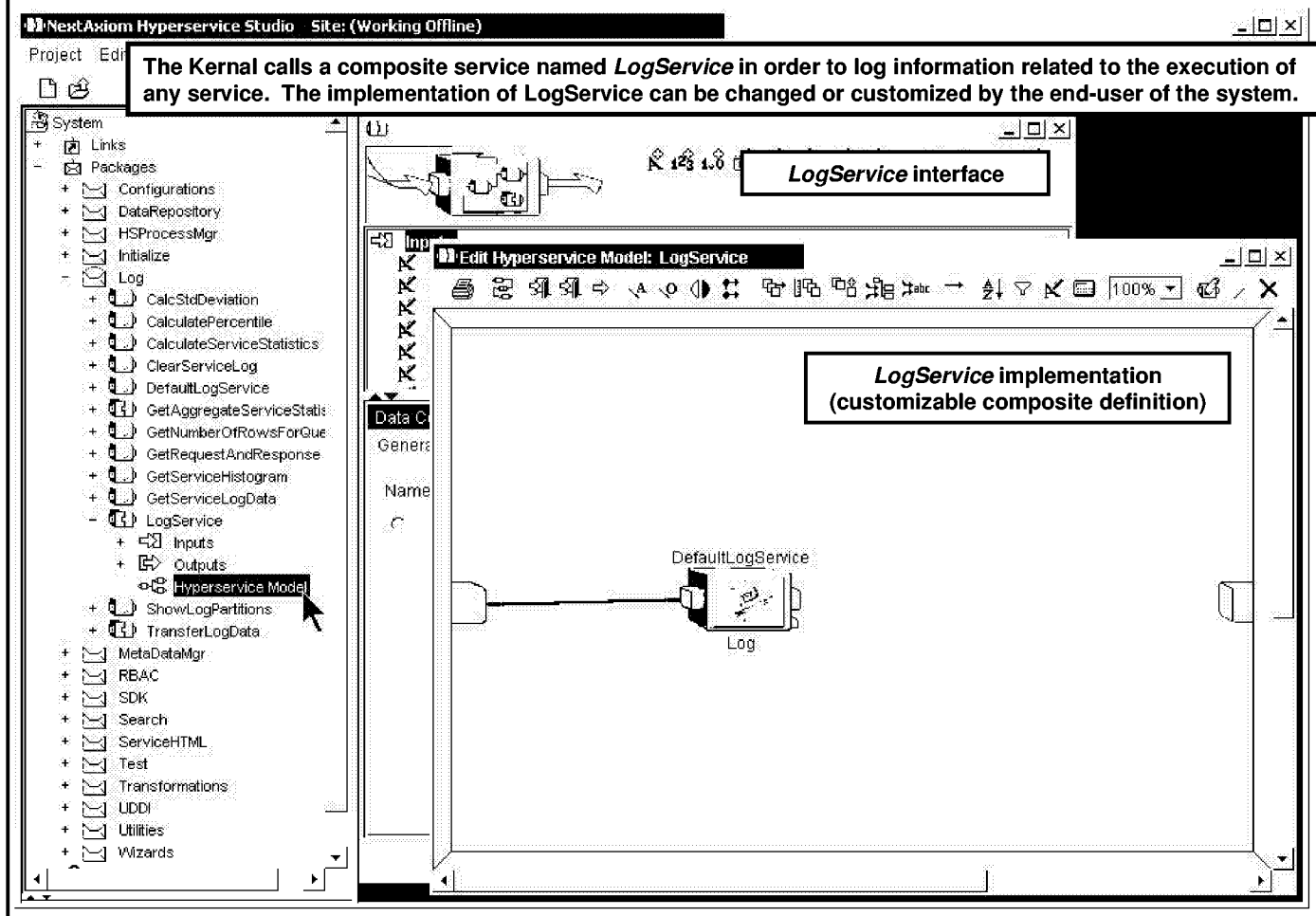


Figure 9a: Services provided for Service Process Monitoring & Management

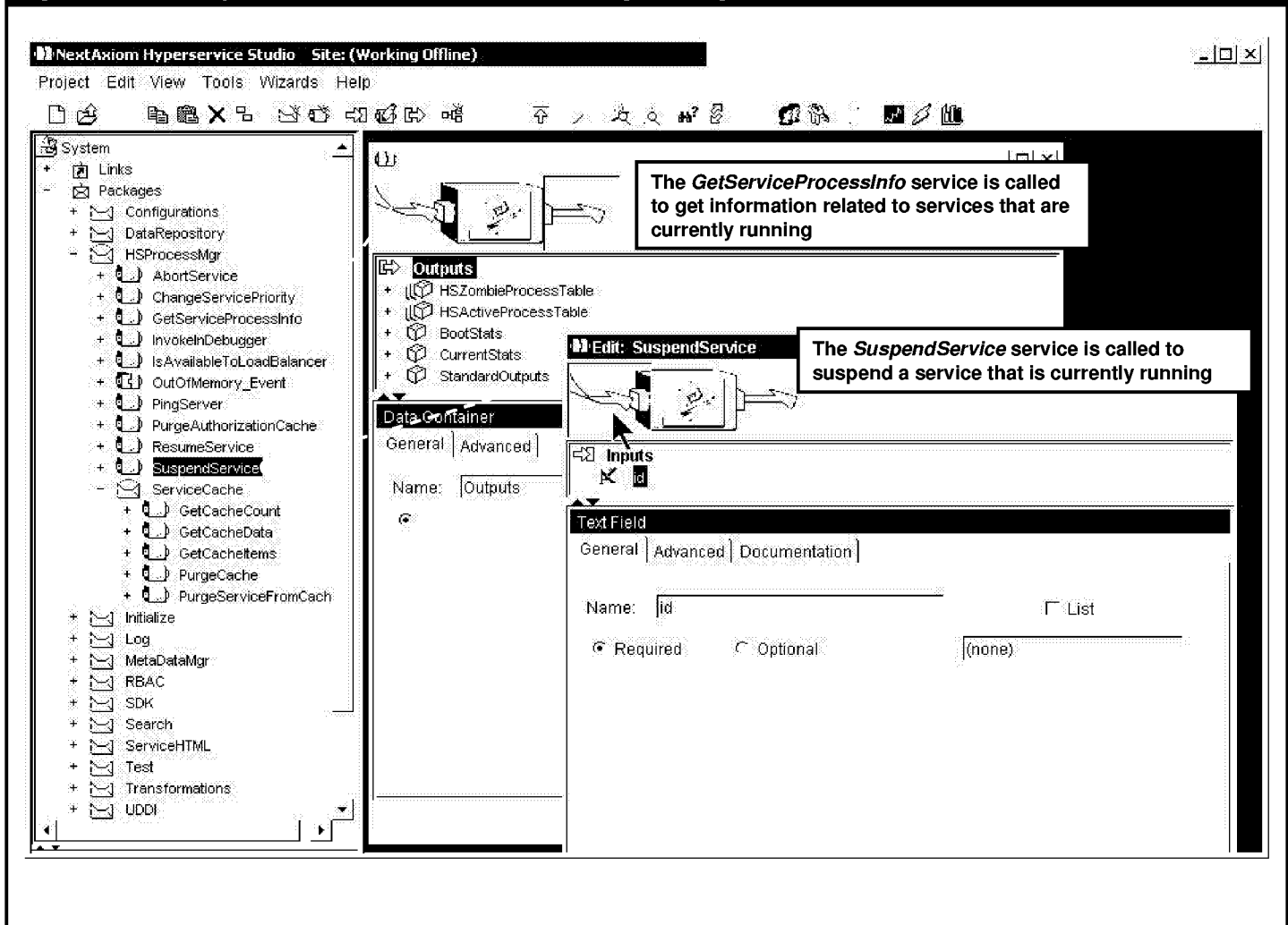


Figure 9b: 'Web Service Task Manager' GUI – calls Process Monitoring & Management services

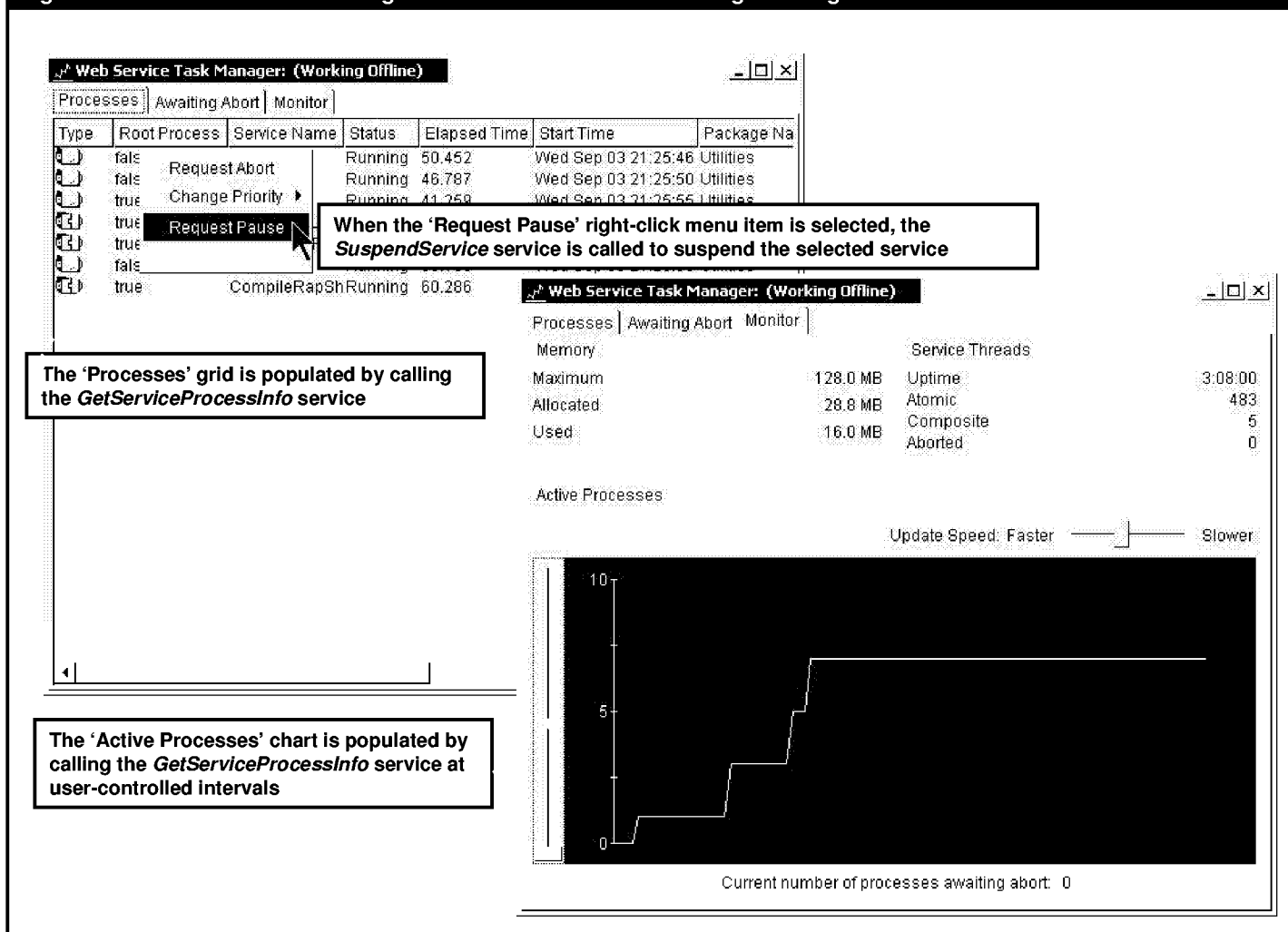


Figure 10a: Services provided for Service Cache Management

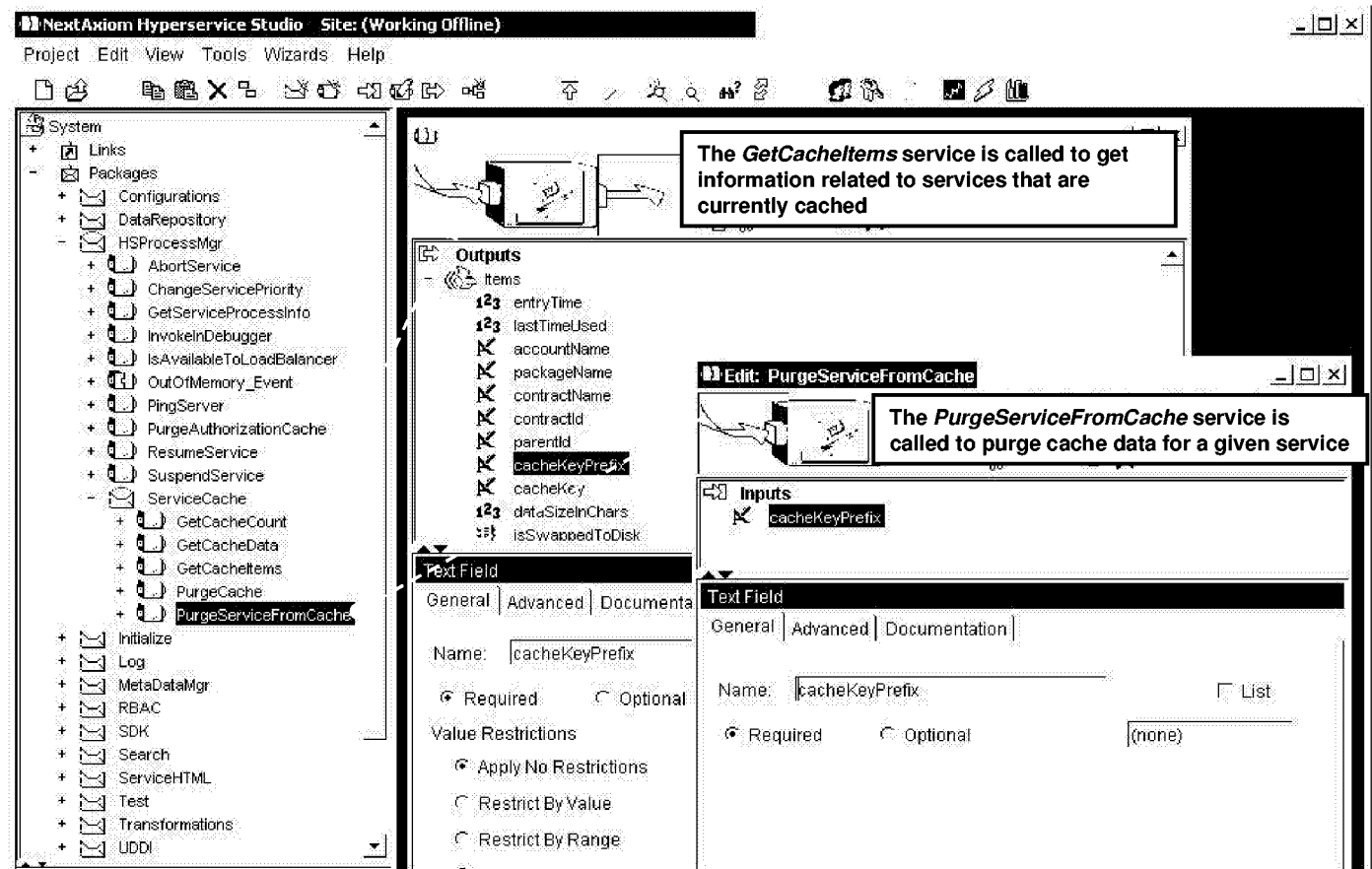


Figure 10b: 'Web Service Cache Manager' GUI – calls Cache Management services

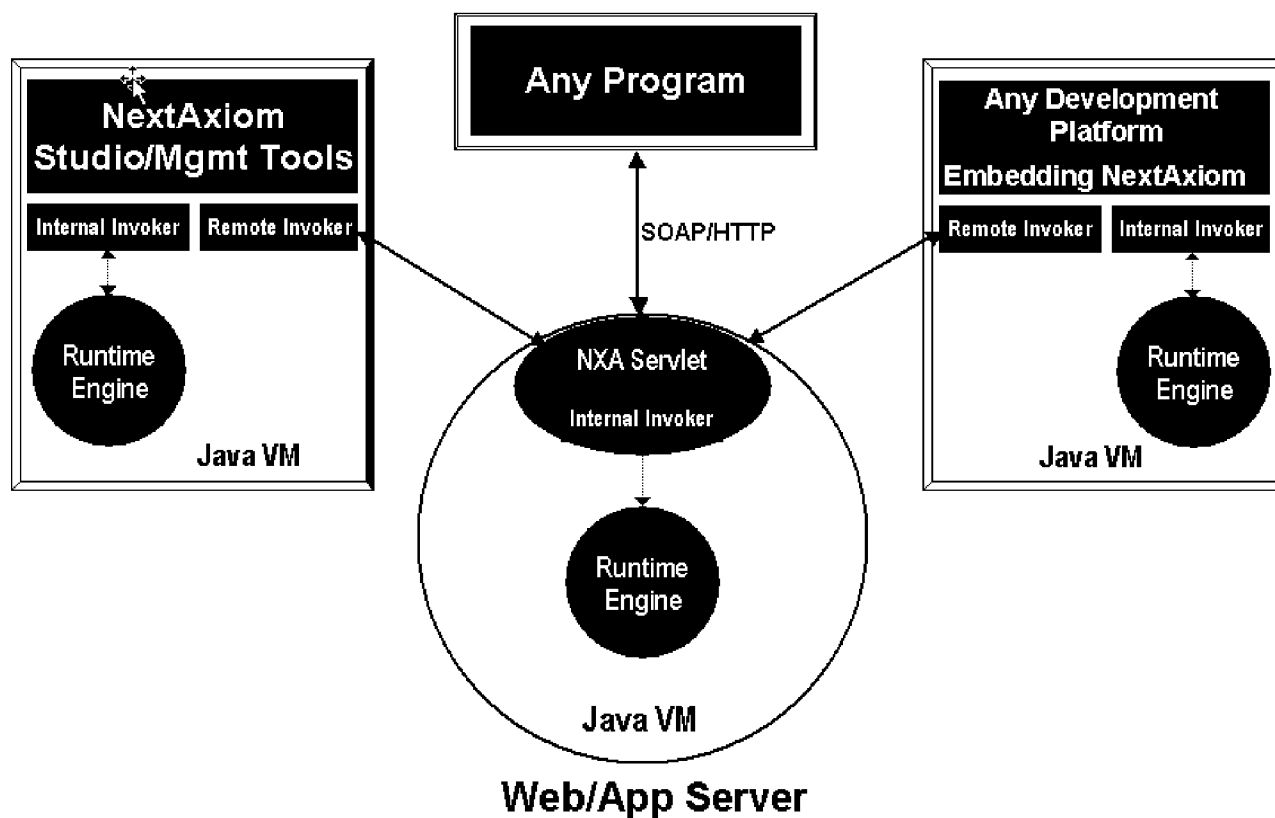
The 'Web Service Cache Manager' GUI is shown with the 'Cache Items' tab selected. The interface includes a title bar 'Web Service Cache Manager: (Working Offline)', a tabbed menu with 'Monitor', 'Cache-Enabled Services', 'Cache Items', and 'Options', and filter sections for 'Restrict by Service' and 'Other Restrictions'. A 'Refresh' button is located on the right. A text box on the left states: 'The 'Cache Items' grid is populated by calling the *GetCacheItems* service'.

The 'Cache Items' grid displays a list of services with columns: Service, Package, Project, Entry Time, Last Used, and On Disk. A right-click context menu is open over the 'AvailableToPromise' project, showing options: 'Show Data...', 'Purge from Cache', and 'Copy to Clipboard'. A text box explains: 'When the 'Purge from Cache' right-click menu item is selected, the *PurgeServiceFromCache* service is called to purge the selected service from the cache'.

Service	Package	Project	Entry Time	Last Used	On Disk
GetZipCode	Shipping	AvailableToPromise	05:46:54 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductFamily	Inventory	AvailableToPromise	05:46:00 PM PDT, 09/04/03	05:43:29 PM PDT, 09/04/03	No
GetZipCode	Shipping	Av:	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Av:	05:46:01 PM PDT, 09/04/03	05:42:51 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Av:	05:46:01 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetZipCode	Shipping	Av:	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetColor	Console...	Sta	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Ava	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetColor	Console...	Sta	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductFamily	Inventory	Ava	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductFamily	Inventory	AvailableToPromise	05:39:55 PM PDT, 09/04/03	05:39:55 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No
GetProductFamily	Inventory	AvailableToPromise	05:43:29 PM PDT, 09/04/03	05:43:29 PM PDT, 09/04/03	No
GetZipCode	Shipping	AvailableToPromise	05:45:51 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No
GetProductDescription	Inventory	AvailableToPromise	05:42:55 PM PDT, 09/04/03	05:42:55 PM PDT, 09/04/03	No
GetProductDescription	Inventory	AvailableToPromise	05:46:30 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetColor	Console...	Standard	05:51:26 PM PDT, 09/04/03	05:51:51 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No

19 cached items found

Figure 11: NextAxiom System Architecture



NextAxiom Technology, Inc.